



The Lymington River – Boldre



An advisory visit carried out by the Wild Trout Trust – December 2008

1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on the Lymington River at Boldre in the New Forest, Hampshire. The water is in the ownership of the Barker Mill Estates and has not been used or actively managed as a fishery for a number of years.

The report covers a stretch of approximately 800m of double bank fishing from Boldre Bridge downstream. The bottom boundary is approximately 2km upstream of the tidal hatches in Lymington.

This report was carried out at the request of Kit Layman. Mr Layman is acting as an advisor to the Barker Mill family and is seeking to ensure that the river is well managed and reaches its full fishery potential. The bottom boundary of the fishery at Boldre Bridge is immediately upstream of waters controlled by the Brockenhurst and Manor Fly Fishing Club (BMFFC). The BMFFC have controlled fishing rights over a long stretch of the Lymington River for many years. The club have expressed an interest in leasing the rights from the Barker Mill Estate and were represented during the site visit by the club's treasurer Mr David Sargeant.

The comments and recommendations made in this report are based on the observations of the Trust's Conservation Officer, Andy Thomas and discussions with Mr Layman, representing the fishery owners and Mr Sargeant from the BMFFC.

Throughout the report, normal convention is followed with respect to bank identification i.e. banks are designated Left Bank (LB) or Right Bank (RB) whilst looking downstream

2. Description of the river.

The Lymington River, along with its sister river the Beaulieu, drain the eastern catchments within the New Forest National Park. The network of small streams and gutters, including the Highland Water, Ober Water and Blackwater drain a network of forest mires before joining just above Brockenhurst to become the Lymington River. From here the river flows south for a further 11km before entering the sea at Lymington.

The New Forest is internationally recognised as one of the largest areas of heathland in Europe (18,000 hectares). It has over 3,500 hectares of ancient and ornamental woodlands and about 1,400 hectares of valley mire, and is home to a great diversity of wildlife. The forest enjoys protection under the European Directives as a Natura 2000 site and is designated a Special Area of Conservation and a Special Protected Area. The whole Forest is a Site of Special Scientific Interest.

The underlying geology of the New Forest National Park is Eocene sands and clays. About 150 years ago, some of the New Forest rivers were "canalised" through deepening, straightening and widening. This improved drainage

provided better conditions for growing timber, which was the government priority for the Forest at the time. As a result, the Lymington River will usually respond very quickly to heavy rainfall and can also suffer from extremely low flows following a dry spell. Between 2002 and 2006 a European LIFE funded project was undertaken to restore river and mire habitats and reconnect degraded sections of river with the Forest flood plain. It is anticipated that these works will reduce the 'flashiness' of the river and bring long term benefits to the ecology.

Water quality on the whole is very good. However, the river has suffered from a number of pollution incidents derived from the local waste water treatment works at Brockenhurst which has resulted in substantial fish mortalities.

The Lymington River is relatively nutrient poor and slightly acidic when compared to the famous chalkstream rivers lying to the east (Hampshire Avon) and west (Test) of the catchment. As a consequence, the natural productivity of the aquatic food web is lower and hence growth rates of resident brown trout *salmo trutta* tends to be on the slow side. This may have directly contributed towards the highly migratory nature of New Forest trout populations. The Environment Agency has identified through its fishery monitoring programme that a significant proportion of the population migrate to sea every year before returning to the system as large adult sea trout ready for spawning.

BBC film footage of spawning sea trout and specimens taken during a fishery survey on the headwaters of the Lymington River can be seen at:

<http://www.bbc.co.uk/insideout/south/series5/trout.shtml>

As well as brown and migratory sea trout, the Lymington supports modest populations of coarse fish, including chub *Leuciscus cephalus* and pike *Esox lucius*. Other conservation species including eel *Anguilla anguilla*, brook lamprey *Lampetra planeri* and bullhead *Cottus gobio* are also present throughout the system.

Angling effort is mainly directed at salmonids with the BMFFC controlling the majority of the available fishing. The club has a long history of augmenting wild stocks of trout with substantial numbers of hatchery derived stocks. Although the river supports a substantial sea trout run it is understood that only modest numbers are captured during the fishing season. In a dry season it is not unusual for the bulk of the spawning stock to enter the river after the fishing rod season has finished on the 31st October. Like most rivers with migratory salmonids, the most productive beats are generally those on the lower reaches of the freshwater river. The 800-m beat below Boldre Bridge is therefore likely to support substantial numbers of sea trout from late summer onwards.

Following the site inspection it is obvious that this beat is not particularly valuable for trout spawning or as a nursery habitat, but it is likely to be very important as an adult sea trout holding area prior to autumn spawning migration. It therefore represents a potentially valuable angling resource.



Large Woody Debris Raft – Good Trout Habitat

Despite having no active management within the last decade or so, the river was in very good order. A number of fallen and half fallen trees were evident and in order to facilitate some access for angling some light trimming or facing up of fallen material will be required. It is essential, however, to retain as much fallen large woody debris (LWD) as possible.

Many of the fallen trees were acting as flow deflectors and were promoting river bed scour as well as providing cover for adult fish. The presence of LWD has been shown to be extremely important in several respects:

- An increase in the variety of flow patterns, depths and localised velocities.
- Development of high in-channel physical habitat diversity
- Significant benefits to the control of run-off at the catchment scale. Woody Debris helps regulate the energy of running water by decreasing the velocity. Thus the 'travel time' of water across the catchment is increased.

LWD is a general term referring to all wood naturally occurring in streams including branches, stumps and logs. Almost all LWD in streams and rivers is derived from trees located within the riparian corridor. Streams with adequate LWD tend to have greater habitat diversity, a natural meandering shape and greater resistance to high water events. Therefore LWD is an essential

component of a healthy stream's ecology and is beneficial in maintaining the diversity of biological communities and physical habitat.

Traditionally, many land managers and riparian owners have treated LWD in streams as a nuisance and have removed it; often with uncertain consequences. This is frequently unnecessary and harmful: stream clearance can reduce the amount of organic material necessary to support the aquatic food web, remove vital in-stream habitats that fish will utilise for shelter and spawning and reduce the level of erosion resistance provided against high flows. In addition, LWD improves the stream structure by enhancing the substrate and diverting the stream current in such a way that pools and spawning riffles are likely to develop. A stream with a heterogeneous substrate and pools and riffles is ideal for benthic (bottom dwelling) organisms as well as for fish species like wild trout.

Some tree management is required. A number of large riverside alders *Alnus glutinosa* appeared to be all of a considerable age and in danger of falling in at the same time. Some rotational coppicing to preserve trees and root systems will create a useful mosaic of dappled light and shade which will promote favourable in channel habitats. Research carried out by the Forestry Commission and Southampton University has measured the contribution that shade makes in keeping New Forest Stream temperatures down, particularly during warm, low flow periods. This is particularly important in pool habitats where it is vital to maintain conditions that are favourable for sea trout to lie up, sometimes for several months prior to upstream migration.



Multi stooled trunk indicates previous coppicing

On one section of LB there appeared to be some light bank erosion taking place due to a heavy growth of marginal willow encroaching out from the RB.



Light bankside erosion exacerbated by the encroachment of a line of willows

The marginal willows here should be faced up but at least a third of the overhanging vegetation should be retained. Pressure can be taken off the LB by placing a large tree trunk into the LB margin to kick the flows away from the edge.

Details on how to construct simple flow deflectors from LWD can be found in the WTT Wild Trout Survival Guide or in the WTT Chalkstream Habitat Manual. Copies are available from the WTT office or via the web site.

If necessary, further measures to reduce erosion can be undertaken by either lining the eroded bank with tree brushings secured behind driven stakes or by using a technique known as willow spilling. Here, a live tree defence is created using a woven mattress of willow whips that eventually knit together and protect the vulnerable bank-side soils from further erosion.

When considering significant tree works it is best to consult with your local authority prior to undertaking the work. Tree works should only be carried out outside the bird nesting season. It is also important to ensure that old ivy clad trees are inspected for bats as their roosts are protected by law. If in doubt commission a bat survey prior to any proposed work.



Another example of good trout habitat. Taking the weight of the overhanging tree will preserve the feature and facilitate some access for angling.



Debris dams rarely block the whole channel and threaten fish migration. Strategically removing the odd branch will retain the feature and reduce any threat of marginal erosion

One or two shallow riffle habitats were observed throughout the reach. Some spawning activity may take place in these sections; however, the very limited nature of any juvenile trout habitat renders this section as not significant in terms of stock recruitment.

Due to its location only 2km above the tide, this section is likely to be an extremely important and valuable habitat for migrating adult sea trout. The habitat is vulnerable to a heavy handed approach to riparian management and the relative neglect that this section has enjoyed may well have benefitted Lymington River sea trout stocks. That said, sea trout will also be vulnerable to poaching. Some angling activity and a watching brief will also help to deter any poaching that would threaten stocks in the future.

It is a legal requirement that some works to the river may require written Environment Agency consent prior to being undertaken either in-channel or within 8 metres of the bank. Any modifications to hard defences will require a land drainage consent on any river designated as "main river". Advice can be obtained from the Development Control Officer.

3. Conclusions

The main value of this stretch of river is as a holding habitat for migratory adult sea trout.

It is very important to maintain a good selection of deep, well-covered pool habitats if this section is to remain a valuable stopping-off point for sea trout. Fish will hold up quite happily even in pools with very little discernable flow provided they are sufficiently deep, cool and have adequate marginal cover. Stocked brown trout may find open sections of river acceptable to lie up but sea trout rarely stop if there is no "roof" to the margin or pool. Very often these fish will lie up or will be tucked under an impenetrable mass of roots and branches but will move into more open areas when the light fades or when spate conditions add colour to the water. When contemplating tree works a light touch is therefore essential.

The BMFFC have expressed an interest in this beat. The author was informed that the fishing club would like the opportunity of using this bottom beat as an extension to the waters they currently manage. Although the bulk of the fishing on BMFFC waters is aimed at stocked brown trout it is understood that the club would like to use this bottom beat as an unstocked sea trout fishery.

It is understood that the fishing club currently stock their own beats using fertile diploid fish. There is mounting evidence that interbreeding between domesticated farmed trout and wild fish can lead to lower fitness and survival amongst the offspring, reducing the numbers of river-bred fish in the population. This is a particular concern on rivers with a strong migratory stock component. Recent changes to the Environment Agency's National Trout & Grayling Strategy reflect this concern, and by 2015 all farmed trout stocked to rivers will be

required to be sterile all-female triploids, or derived from local broodstock. More information on this subject can be found at:

<http://www.environment-agency.gov.uk/subjects/fish/165773/1791055/1800027/>

4. Recommendations

- Retain as much LWD within the channel as possible. The West Country Rivers Trust provides a useful guide to the management of natural LWD:
1. Is the debris fixed, if yes then continue to 2, if not continue to 5.
 2. Is the debris causing excess erosion by redirecting the current into a vulnerable bank? If yes then go to 5 if not then go to 3.
 3. Would fish be able to migrate past it (take into account high river flows). If yes go to 4, if no go to 5.
 4. **Retain the woody debris in the river.**
 5. **Re-position or extract the debris.**

Note: If the debris dam needs to be removed but there is still a significant amount of the root system attached to the bank then it is recommended that the stump be retained for its wildlife habitat value and its stabilising effect on the bank.

- Retain refuge areas where fish can hold up without being disturbed by anglers.
- The balance between “fishable” water and holding habitat for fish must always favour the fish on a river managed for wild stocks.
- Monitor the lightly eroding banks and take action to reduce or slow the rate of erosion if necessary. A combination of flow deflectors and marginal planting with live willow spilling can resolve erosion issues.
- Undertake some light selective coppicing and use materials within the channel to create some enhanced lies for sea trout.
- Keep the areas adjacent to public access points at each end of the fishery as overgrown as possible to deter unwanted visitors.
- Actively use the fishery for low key sea trout fishing. Fisheries with a reputation for never being used can become a target for local poachers.

5. Making it happen

There is the possibility that the WTT could help to start an enhancement programme. Physical enhancement works could be kick-started with the assistance of a WTT 'Practical Visit' (PV). PVs typically comprise a 1-3 day visit where approved WTT 'Wet-Work' experts will complete a demonstration plot on the site to be restored. This will enable project leaders and teams to obtain "on the ground" training regarding the appropriate use of conservation techniques and materials, including Health & Safety equipment and requirements. This will then give projects the strongest possible start leading to successful completion of aims and objectives.

The WTT can fund the cost of labour (two/ three man team) and materials (max £1800). Recipients will be expected to cover travel and accommodation expenses of the contractor.

There is currently a big demand for practical assistance and the WTT has to prioritise exactly where it can deploy its limited resources. However, the Trust is always available to provide free advice and help to clubs, syndicates and landowners through guidance and linking them up with others that have had experience in improving trout fisheries.

Acknowledgement

The WTT would like to thank the Environment Agency for supporting the advisory and practical visit programmes.

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